

Turning Pressure into Prudence: How PPATK Policy and Institutional Trust Shape MSME Financial Behavior Through Financial Literacy

Faizal Rizky Yuttama

Universitas Harapan Bangsa, Purwokerto

faizal@uhb.ac.id

Budi Widadi

Universitas Harapan Bangsa, Purwokerto

budi@uhb.ac.id

Abstract

MSMEs play a critical role in economic development but often struggle with financial vulnerability and limited integration into formal financial systems. Regulatory policies such as account blocking by PPATK and low institutional trust can further hinder MSMEs, especially when financial literacy is inadequate. This study aims to analyze the impact of PPATK's account blocking policy and trust in financial institutions on MSME financial behavior, with financial literacy as a mediating variable. A quantitative, causal-comparative research design was employed using a sample of 200 MSMEs in Banyumas Regency selected through purposive sampling. Data were collected via a structured Likert-scale questionnaire and analyzed using Structural Equation Modeling with Partial Least Squares (SEM-PLS). Reliability and validity were assessed through composite reliability, AVE, and loading factors; mediation and direct effects were tested using bootstrapping with 5,000 subsamples. The findings revealed that both PPATK policy and institutional trust significantly influence MSME financial behavior. Financial literacy demonstrated a strong direct effect on financial behavior and served as a significant mediator for both institutional variables. MSMEs with higher trust and stronger literacy were more likely to engage in transparent and strategic financial practices. Regulatory pressure, when filtered through financial literacy, shifted from being a constraint to a catalyst for responsible financial behavior. This study highlights the dual importance of institutional trust and financial education in shaping MSME responses to financial regulation. Integrated strategies that combine enforcement with literacy programs can enhance financial resilience and inclusion for MSMEs in emerging economies.

Keywords: *financial literacy, PPATK policy, trust, financial behavior, MSMEs*

A. INTRODUCTION

In the era of globalization and rapid technological advancement, organizations are required to Micro, Small, and Medium Enterprises (MSMEs) serve as the backbone of Indonesia's national economy but remain highly vulnerable to repressive financial regulatory policies (Aidi et al., 2023). One such policy that has recently garnered attention is the freezing of bank accounts by the Indonesian Financial Transaction Reports and Analysis Center (PPATK) as part of anti-money laundering and counter-terrorism financing efforts (Ahmad et al., 2023). While this policy aims to safeguard the integrity of the financial system, it has inadvertently affected many MSME actors particularly those with low financial literacy and limited understanding of legal transaction procedures (Morgan & Long, 2020).

The Indonesian government, through PPATK, has intensified surveillance of financial activities, including account freezes for suspicious transactions. According to PPATK's 2023 report, over 18,000 accounts were frozen due to suspicious activity, some of which belonged to MSMEs unaware of formal transaction protocols (PPATK, 2024). This situation highlights that small business actors are not exempt from the increasingly rigorous financial oversight. Sudden account blocks often disrupt operations, especially when business owners mix personal and business finances or conduct undocumented high value cash transactions.

Account blocking based on suspicions of illicit activity can severely disrupt MSME operations (Lu et al., 2024). Entrepreneurs who lack awareness of the legal and administrative risks embedded in their financial behavior may inadvertently lose access to critical financial resources (Bilici & Çevik, 2023). In this regard, financial literacy becomes a crucial mediating factor (Delemere & Liston, 2024). MSMEs with higher financial literacy are more likely to maintain proper bookkeeping, separate personal and business finances, and comply with Know Your Customer (KYC) and cash transaction regulations from financial institutions (Dash & Mohanta, 2024).

However, financial literacy does not operate in isolation. Trust in formal financial institutions such as banks, regulators, and oversight bodies like PPATK also plays a significant role (Andreou & Anyfantaki, 2021). When MSMEs trust that the financial system is designed to support rather than penalize them, they are more inclined to adopt transparent, compliant, and responsible financial behaviors (Nițoi & Pochea, 2024). Conversely, low institutional trust may push entrepreneurs to resort to informal financial practices, which are often riskier.

Although financial literacy has been widely studied as a determinant of MSMEs' financial behavior (Grohmann, 2018; Rey-Ares et al., 2021), most research emphasizes internal factors such as knowledge, attitudes, or lifestyle. Few studies have explored the external regulatory dimensions particularly the impact of PPATK's account-freezing policy on the financial behavior of vulnerable and informal microenterprises (Ahmad et al., 2023). Existing research tends to analyze this policy from legal or banking perspectives, overlooking its operational and psychological effects on MSMEs. In reality, such policies may disrupt cash flow, hinder transactions, and reduce MSMEs' trust in the formal financial system (Nițoi & Pochea, 2024).

Moreover, there is limited research examining financial literacy as a mediating variable between regulatory pressure and behavioral change. The potential of financial understanding to mitigate the negative consequences of such policies remains underexplored, especially in developing economies like Indonesia. Finally, trust in formal financial institutions a key driver of responsible financial behavior is often neglected in behavioral models used in MSME studies (Andreou & Anyfantaki, 2021; Cucinelli & Soana, 2023).

Against this backdrop, this study becomes particularly relevant. By adopting a mediation model, it seeks to analyze how financial literacy mediates the relationship between PPATK's account blocking policy and MSMEs' financial behavior (Widjayanti et al., 2025), while also assessing the role of institutional trust as a critical antecedent of sound financial conduct (Cucinelli & Soana, 2023). The findings are expected to inform more inclusive financial literacy programs and policy approaches by PPATK, tailored to the unique challenges faced by MSMEs (Frisancho, 2023).

B. LITERATURE REVIEW

PPATK Account Freezing Policy

The account freezing policy implemented by the Indonesian Financial Transaction Reports and Analysis Center (PPATK) serves as a regulatory mechanism to detect and prevent suspicious financial activities potentially linked to money laundering and terrorism financing. Authorized by Law No. 8/2010, PPATK has the mandate to recommend account freezes based on analyses of reports submitted by financial institutions. However, the enforcement of this policy may have unintended psychological and operational consequences, especially for MSME actors who lack awareness of compliance protocols (Ahmad et al., 2023). Several studies have indicated that stringent financial regulations, when not accompanied by adequate financial literacy and educational support, may erode trust in the formal financial system and discourage MSME participation (Lu et al., 2024). Therefore, understanding how MSMEs perceive such regulatory measures is essential in assessing their influence on financial behavior.

Financial Literacy

Financial literacy refers to the ability of individuals to comprehend and apply financial concepts and tools in order to make informed and effective decisions (Delemere & Liston, 2024). It encompasses knowledge of cash flow management, financial product utilization, bookkeeping practices, and long-term financial planning (Ventre et al., 2024). Previous research has consistently demonstrated the positive impact of financial literacy on sustainable financial behavior (Grohmann, 2018; Rey-Ares et al., 2021). Within MSME contexts, financial literacy not only facilitates better business management but also serves as a protective factor against external risks, including regulatory disruptions. (Dash & Mohanta, 2024) argue that well-informed entrepreneurs are more resilient when confronted with regulatory changes and increasing institutional scrutiny.

Trust in Formal Financial Institutions

Trust in financial institutions reflects entrepreneurs' confidence that entities such as banks, regulators, and oversight bodies like PPATK operate fairly and offer protection (Andreou & Anyfantaki, 2021). This trust influences whether business owners engage with formal financial services or opt for informal alternatives. Low levels of institutional trust may result in avoidance behavior, increased reliance on cash transactions, and reduced financial transparency (Cucinelli & Soana, 2023). Conversely, those with higher trust are more receptive to policy interventions and more compliant with financial management practices (Nițoi & Pochea, 2024).

Financial Behavior of MSMEs

Financial behavior refers to the decisions and actions taken by individuals or entrepreneurs in managing, spending, investing, and recording finances (Cascavilla, 2024). Healthy financial behavior in MSMEs is typically characterized by consistent bookkeeping, separation of personal and business finances, and careful cash flow and debt management (Widjayanti et al., 2025). Key influencing factors include financial literacy, regulatory environment, external pressures, and trust in financial systems. Studies also reveal that policy interventions may have either positive or negative effects, depending on entrepreneurs' cognitive readiness and attitudes (Chang et al., 2021).

Financial Literacy as a Mediating Variable

This study positions financial literacy as a mediating variable that links the account freezing policy of PPATK with MSME financial behavior. The conceptual foundation aligns with the Theory of Planned Behavior (TPB), which posits that attitudes, subjective norms, and perceived behavioral control shape intention and subsequent behavior (Ajzen, 2012). Within this framework, financial literacy enhances perceived control and rational attitudes, enabling MSME actors to respond more effectively to external stressors such as account freezes. Research by (Widjayanti et al., 2025) supports this view by demonstrating the strengthening effect of financial literacy on the link between attitudes and sound financial behavior.

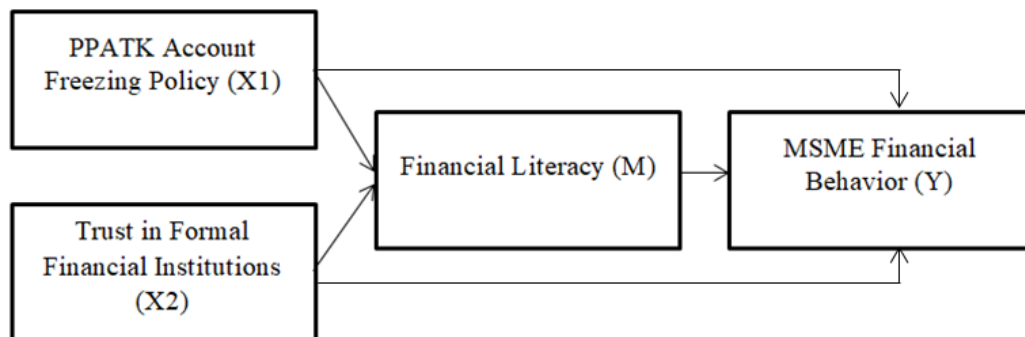


Figure. 1 Research Framework

C. METHODOLOGY OF RESEARCH

Research Design and Analytical Approach

This study employed a quantitative, causal-comparative design to investigate the impact of PPATK's account blocking policy and trust in formal financial institutions on the financial behavior of MSMEs in Banyumas Regency, with financial literacy as a mediating variable. The quantitative approach was chosen for its ability to explain the relationships between variables systematically and measurably through statistical data analysis (Ghozali, 2014; Sekaran U, 2019). Data analysis was

carried out using Structural Equation Modeling with the Partial Least Squares approach (SEM-PLS), utilizing the latest version of SmartPLS software.

Population, Sampling, and Respondents

The population in this research comprised MSME actors in Banyumas Regency who actively utilize formal financial services. A purposive sampling technique was applied to select respondents who met specific criteria, namely having an active account in a formal financial institution, running a business for at least one year, and being willing to complete the questionnaire thoroughly. The minimum required sample size was determined using the rule of thumb in SEM-PLS analysis, which suggests at least ten times the number of indicators of the most complex construct (Hair et al., 2019). With a total of 18 indicators in the model, the minimum sample size needed was 180. For practical considerations and increased statistical power, the final sample comprised 200 MSME respondents.

Data Collection Instruments

Data were collected through an online questionnaire distributed to MSME actors across several districts in Banyumas. The questionnaire employed a five-point Likert scale ranging from "strongly disagree" to "strongly agree" and was developed based on validated theoretical constructs. Instrument items were reviewed and refined by academic experts to ensure content validity. The instrument covered four primary constructs. The first construct measured perceptions of PPATK's account blocking policy, consisting of four items related to perceived risks and regulatory impact, adapted from prior research (Ahmad et al., 2023; Lu et al., 2024). The second construct assessed trust in formal financial institutions, also comprising four indicators that reflected perceptions of institutional credibility, transparency, and consumer protection (Cucinelli & Soana, 2023; Nițoi & Pochea, 2024). Financial literacy, serving as the mediating variable, was measured using four indicators capturing knowledge, skills, and financial management behavior, based on prior works (Dash & Mohanta, 2024; Delemere & Liston, 2024). Finally, financial behavior, as the dependent variable, included six indicators assessing how MSMEs record, manage, and utilize their business finances (Grohmann, 2018; Widjayanti et al., 2025).

Data Analysis Technique

The collected data were analyzed using SEM-PLS due to its suitability for predictive modeling with relatively small sample sizes and non-normal data distribution. The model was assessed in two stages. First, the measurement model (outer model) was evaluated to determine the reliability and validity of each construct through indicator loadings (threshold ≥ 0.70), Average Variance Extracted (AVE ≥ 0.50), and composite reliability (≥ 0.70). Second, the structural model (inner model) was analyzed to assess the relationships among constructs using R-square values and path coefficients. The significance of the direct, indirect, and mediating effects was tested using the bootstrapping technique with 5,000 subsamples, following the mediation procedure outlined by (Preacher & Hayes, 2008).

D. RESULT AND DISCUSSION

Before presenting the results of the measurement and structural model, it is important to describe the characteristics of the respondents who participated in this study. A total of 200 MSME actors in Banyumas Regency were surveyed, all of whom met the inclusion criteria of having an active account in a formal financial institution and operating their business for at least one year. Table 1.1 explains the characteristics of respondents in the study.

Table. 1 Characteristics of Respondents

Characteristics	Category	Frequency	Percentage (%)
Gender	Male	110	55
	Female	90	45
Age	< 30 years	32	16
	30–45 years	108	54
	> 45 years	60	30
Education Level	Junior/High School	84	42
	Diploma/Bachelor's degree	92	46
	Postgraduate	24	12
Business Sector	Trade	82	41
	Services	74	37
	Manufacturing/Production	44	22

The distribution of respondents shows a balanced gender composition, with slightly more male (55%) than female (45%) MSME actors, suggesting that both genders are actively engaged in entrepreneurial activities in Banyumas. The majority of respondents (54%) were aged between 30–45 years, which reflects the dominance of entrepreneurs in their productive working age, a group typically associated with higher adaptability to regulatory and financial literacy initiatives. Educational attainment was relatively diverse, with 42% having completed secondary education and 46% holding a diploma or bachelor's degree, while 12% had postgraduate qualifications. This distribution indicates that while a significant proportion of MSME actors may have limited formal education, nearly half have higher educational backgrounds, potentially influencing their financial literacy and responsiveness to institutional policies.

In terms of business sectors, trade (41%) and services (37%) accounted for the majority, followed by manufacturing/production (22%). This composition highlights the transactional and service-oriented nature of MSMEs in the region, sectors that are particularly sensitive to regulatory measures such as account freezing and heavily dependent on financial discipline. These characteristics provide an important context for interpreting the PLS results, as differences in education and sector exposure may explain the varying levels of financial literacy and financial behavior observed in the structural model analysis.

Table. 2 Validity Test

	Financial _Literacy (M)	MSME Financial _Behavior (Y)	PPATK Account _Freezing Policy (X1)	Trust in Formal _Financial Institutions (X2)
M.1	0,918			
M.2	0,910			
M.3	0,870			
M.4	0,902			
X1.1			0,928	
X1.2			0,955	
X1.3			0,944	
X1.4			0,932	
X2.1				0,929
X2.2				0,931
X2.3				0,947
X2.4				0,925
Y.1		0,903		
Y.2		0,895		
Y.3		0,906		
Y.4		0,822		
Y.5		0,856		
Y.6		0,733		

The results of the convergent validity test based on outer loadings indicate that all indicators of the research variables exceeded the recommended threshold value of 0.70, confirming their validity and appropriateness for construct measurement. The Financial Literacy (M) variable was measured by four indicators (M1–M4) with outer loading values ranging from 0.870 to 0.918. The PPATK Account Freezing Policy (X1) variable also demonstrated excellent consistency, with values between 0.928 and 0.955. Furthermore, the Trust in Formal Financial Institutions (X2) variable showed high reliability, with loadings ranging from 0.925 to 0.947. The MSME Financial Behavior (Y) variable, measured by six indicators, reported outer loading values ranging from 0.733 to 0.906. Although Y6 had the lowest value (0.733), it still exceeded the minimum acceptable threshold of 0.70 recommended by (Hair et

al., 2019), and therefore all indicators were retained. These findings confirm that the measurement model has achieved convergent validity, and the indicators can be employed in the subsequent reliability and structural model assessments.

Table. 3 Reliability Test

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Financial _Literacy (M)	0,922	0,925	0,945	0,810
MSME Financial _Behavior (Y)	0,925	0,930	0,942	0,730
PPATK Account _Freezing Policy (X1)	0,956	0,964	0,968	0,883
Trust in Formal _Financial Institutions (X2)	0,950	0,952	0,964	0,871

The construct reliability and validity tests further confirmed the robustness of the measurement model. As shown in the results, all variables achieved Cronbach's Alpha and Composite Reliability (rho_c) values well above the recommended threshold of 0.70, indicating strong internal consistency. Specifically, Financial Literacy (M) recorded a Cronbach's Alpha of 0.922 and a Composite Reliability of 0.945 with an AVE of 0.810, while MSME Financial Behavior (Y) demonstrated a Cronbach's Alpha of 0.925 and a Composite Reliability of 0.942 with an AVE of 0.730. The PPATK Account Freezing Policy (X1) construct yielded the highest reliability, with a Cronbach's Alpha of 0.956 and Composite Reliability of 0.968, supported by an AVE of 0.883. Similarly, Trust in Formal Financial Institutions (X2) also showed excellent reliability with a Cronbach's Alpha of 0.950 and Composite Reliability of 0.964, and an AVE of 0.871. Since all AVE values exceeded the 0.50 benchmark (Hair et al., 2019), convergent validity was established. These findings confirm that all constructs meet the criteria for reliability and convergent validity, and are therefore appropriate for subsequent structural model evaluation.

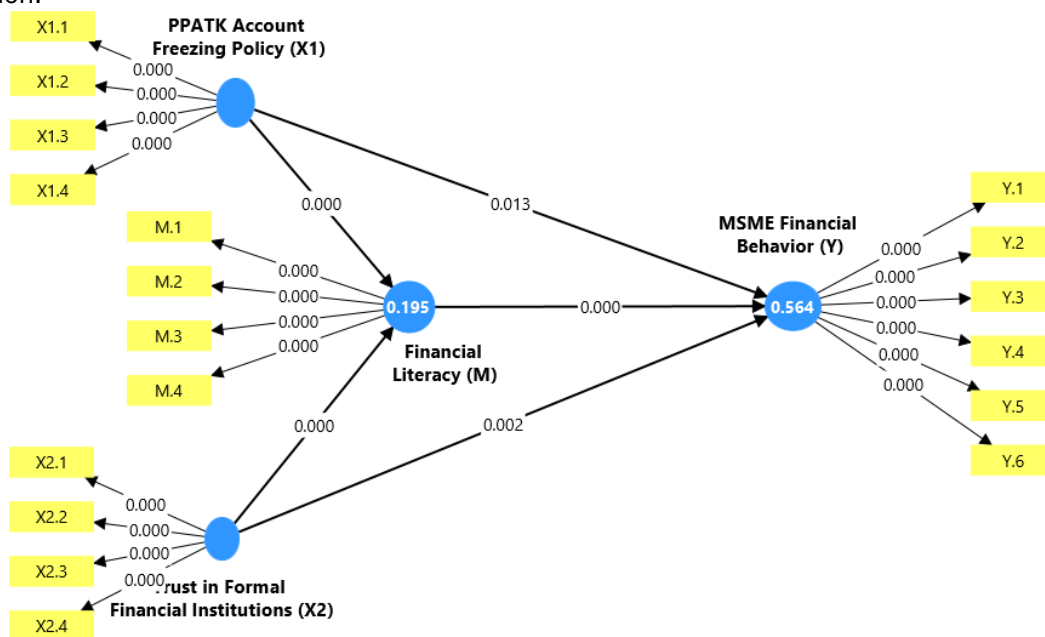


Figure. 2 Output PLS-SEM

The structural model analysis illustrated in Figure X confirms the role of Financial Literacy (M) as a mediating variable between the exogenous constructs and MSME Financial Behavior (Y). The model reveals that the PPATK Account Freezing Policy (X1) has both a direct effect on financial behavior ($p = 0.013$) and an indirect effect through financial literacy ($p < 0.001$). Similarly, Trust in Formal Financial Institutions (X2) significantly influences MSME financial behavior directly ($p = 0.002$) and indirectly via financial literacy ($p < 0.001$). The mediating construct of financial literacy ($\beta = 0.195$) plays a substantial role in amplifying the influence of both institutional trust and the PPATK policy on MSME

financial behavior. Overall, the model explains a considerable proportion of the variance in MSME Financial Behavior ($R^2 = 0.564$) and Financial Literacy ($R^2 = 0.195$), highlighting the importance of financial literacy as a strategic pathway through which regulatory policies and institutional trust translate into improved financial behavior among MSMEs.

Table. 4 Path Coefficients

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
Financial _Literacy (M) -> MSME Financial _Behavior (Y)	0,616	0,618	0,061	10,093	0,000
PPATK Account _Freezing Policy (X1) -> Financial _Literacy (M)	0,244	0,243	0,070	3,494	0,000
PPATK Account _Freezing Policy (X1) -> MSME Financial _Behavior (Y)	0,127	0,126	0,051	2,480	0,013
Trust in Formal _Financial Institutions (X2) -> Financial _Literacy (M)	0,314	0,313	0,066	4,787	0,000
Trust in Formal _Financial Institutions (X2) -> MSME Financial _Behavior (Y)	0,171	0,171	0,054	3,158	0,002

The structural model results demonstrate significant relationships among the constructs, as shown in the path coefficients. Financial Literacy (M) has a strong and positive effect on MSME Financial Behavior (Y) ($\beta = 0.616$, $t = 10.093$, $p < 0.001$), indicating that higher levels of financial literacy significantly enhance the financial behavior of MSMEs. The PPATK Account Freezing Policy (X1) was found to have a positive effect on Financial Literacy (M) ($\beta = 0.244$, $t = 3.494$, $p < 0.001$) and a direct but weaker effect on MSME Financial Behavior (Y) ($\beta = 0.127$, $t = 2.480$, $p = 0.013$). Similarly, Trust in Formal Financial Institutions (X2) showed a significant positive effect on Financial Literacy (M) ($\beta = 0.314$, $t = 4.787$, $p < 0.001$) and also directly influenced MSME Financial Behavior (Y) ($\beta = 0.171$, $t = 3.158$, $p = 0.002$). These findings suggest that both the PPATK policy and institutional trust contribute not only to strengthening financial literacy among MSMEs but also to shaping their financial behavior, both directly and indirectly.

Table. 5 R-Square

	R-square	R-square adjusted
Financial _Literacy (M)	0,195	0,187
MSME Financial _Behavior (Y)	0,564	0,558

The coefficient of determination (R^2) values provide evidence of the explanatory power of the model. As shown in Table 1.4, the Financial Literacy (M) construct obtained an R^2 value of 0.195 (adjusted $R^2 = 0.187$), indicating that 19.5% of the variance in financial literacy can be explained by the PPATK Account Freezing Policy (X1) and Trust in Formal Financial Institutions (X2). Meanwhile, the MSME Financial Behavior (Y) construct recorded a higher R^2 value of 0.564 (adjusted $R^2 = 0.558$), suggesting that 56.4% of the variance in MSME financial behavior is explained jointly by financial literacy, the PPATK policy, and institutional trust. According to (Chin & Newsted, 1998), an R^2 value of 0.19 is considered weak, 0.33 moderate, and 0.67 substantial. Based on this guideline, the explanatory power for financial literacy is weak, while the explanatory power for MSME financial behavior is moderate to strong. These findings indicate that while external factors have a limited role in explaining financial literacy, the combined influence of literacy, policy, and trust provides a meaningful contribution to shaping MSME financial behavior.

Discussion

The findings of this study provide several important insights into how regulatory pressure and institutional trust shape MSME financial behavior through financial literacy. First, the PPATK account freezing policy was shown to have both a direct and significant influence on financial behavior ($\beta = 0.127$, $p = 0.013$) and an indirect influence through financial literacy ($\beta = 0.244$, $p < 0.001$). This indicates that regulatory pressure does not merely act as a deterrent but also encourages MSMEs to

adopt more cautious and transparent practices. Entrepreneurs who perceive the risks of account freezing reinforce internal controls, improve bookkeeping discipline, and reduce informal transactions, consistent with studies highlighting the disciplining effect of regulatory oversight (Lu et al., 2024; Nițoi & Pochea, 2024). At the same time, the policy stimulates financial learning, as MSMEs seek to understand compliance requirements and legitimate financial procedures (Dash & Mohanta, 2024). This dual role suggests that regulatory enforcement can act as both a constraint and an educator, indirectly upgrading financial literacy among MSMEs (Delemere & Liston, 2024).

Second, financial literacy demonstrated the strongest direct effect on MSME financial behavior ($\beta = 0.616$, $t = 10.093$, $p < 0.001$). MSMEs with higher literacy levels exhibited more strategic, organized, and forward-looking practices such as budgeting, timely reporting, and reliance on formal instruments. This finding confirms prior research positioning financial literacy as a cornerstone of sustainable and growth-oriented financial behavior (Callis et al., 2023; Grohmann, 2018; Mazzoli et al., 2024; Rey-Ares et al., 2021). Moreover, the mediating role of financial literacy underscores that regulatory policies alone cannot guarantee positive behavioral outcomes; entrepreneurs must also have the cognitive tools to interpret and respond adaptively to such pressures (Morgan & Long, 2020; Preacher & Hayes, 2008). Without adequate literacy, policies risk being perceived as punitive; with sufficient literacy, the same policies become catalysts for prudent behavior (Andreou & Anyfantaki, 2021).

Third, trust in formal financial institutions significantly enhanced both financial literacy ($\beta = 0.314$, $p < 0.001$) and financial behavior ($\beta = 0.171$, $p = 0.002$). Trust reduces psychological barriers and uncertainty, making entrepreneurs more open to financial education and more willing to adopt formal practices (Cucinelli & Soana, 2023; Morgan & Long, 2020). In semi-urban contexts such as Banyumas, institutional trust plays an enabling role by fostering engagement with regulated financial systems (Liu & Zhang, 2021; Nițoi & Pochea, 2024). The results show that entrepreneurs with higher trust not only engage more with formal services but also exhibit more responsible behavior, such as formal savings, business-related credit usage, and transparent reporting (Cascavilla, 2024; Rey-Ares et al., 2021). Thus, trust operates both as a direct enabler of behavior and as an indirect driver of literacy development (Strömbäck et al., 2020).

Finally, the explanatory power of the model further supports these interpretations. The R^2 value for financial literacy (0.195) indicates that policy and trust explain a modest but meaningful portion of literacy variance, while the R^2 for financial behavior (0.564) suggests a moderate-to-strong explanatory capacity of the combined predictors. These values confirm that while external forces have limited influence on knowledge acquisition alone, the integration of financial literacy with policy and trust provides a substantial pathway for shaping MSME financial behavior (Hair et al., 2019). Taken together, these findings advance existing literature by showing that regulatory interventions like the PPATK policy do not act in isolation. Their effectiveness depends heavily on entrepreneurs' financial literacy and institutional trust. Where these factors are present, regulation shifts from being perceived as coercive to being interpreted as constructive, thereby fostering a culture of prudence, transparency, and resilience in MSMEs (Frisancho, 2023; Widjayanti et al., 2025).

E. CONCLUSION

This study concludes that both regulatory enforcement and institutional trust significantly influence the financial behavior of MSMEs, with financial literacy playing a crucial mediating role. The PPATK account blocking policy acts not only as a compliance trigger but also indirectly fosters financial awareness and responsible behavior when coupled with adequate financial literacy. Similarly, trust in financial institutions enhances MSME engagement in formal financial systems by encouraging both learning and adoption of sound financial practices. These findings underscore the importance of integrating financial education with regulatory and trust-building strategies to strengthen MSME financial resilience. As financial literacy amplifies the positive effects of both regulation and trust, stakeholders including policymakers, financial institutions, and development agencies must prioritize inclusive literacy programs to support sustainable financial behavior among MSMEs, particularly in semi-peripheral regions like Banyumas.

F. REFERENCES

Ahmad, S., Lensink, R., & Mueller, A. (2023). Religion, social desirability bias and financial inclusion:

- Evidence from a list experiment on Islamic (micro-)finance. *Journal of Behavioral and Experimental Finance*, 38. <https://doi.org/10.1016/j.jbef.2023.100795>
- Aidi, Z., Prawira, M. Y., & Fitriadi, M. (2023). Indonesia Legal Policy for Micro, Small, and Medium Enterprises Post-COVID-19 Pandemic Economic Recovery. *Review of Economics and Finance*, 21, 2611–2617. <https://doi.org/10.55365/1923.x2023.21.279>
- Ajzen, I. (2012). The theory of planned behavior. *Handbook of Theories of Social Psychology: Volume 1*, 50(2), 438–459. <https://doi.org/10.4135/9781446249215.n22>
- Andreou, P. C., & Anyfantaki, S. (2021). Financial literacy and its influence on internet banking behavior. *European Management Journal*, 39(5), 658–674. <https://doi.org/10.1016/j.emj.2020.12.001>
- Bilici, M. R., & Çevik, S. (2023). Financial literacy and cash holdings in Türkiye. *Central Bank Review*, 23(4). <https://doi.org/10.1016/j.cbrev.2023.100129>
- Callis, Z., Gerrans, P., Walker, D. L., & Gignac, G. E. (2023). The association between intelligence and financial literacy: A conceptual and meta-analytic review. *Intelligence*, 100. <https://doi.org/10.1016/j.intell.2023.101781>
- Cascavilla, A. (2024). Between money and speculative asset: The role of financial literacy on the perception towards Bitcoin in Italy. *Journal of Economic Psychology*, 102. <https://doi.org/10.1016/j.joep.2024.102716>
- Chang, C., Lu, C., & Lai, P. (2021). Examining the Drivers of Competitive Advantage of the International Logistics Industry. *International Journal of Logistics Research and Applications*, 25(12), 1523–1541. <https://doi.org/10.1080/13675567.2021.1915263>
- Chin, W. W., & Newsted, P. R. (1998). The partial least squares approach to structural equation modeling. Modern methods for business research. In *Statistical Strategies for Small Sample Research*. Lawrence Erlbaum Associates. <http://books.google.com.sg/books?hl=en&lr=&id=EDZ5AgAAQBAJ&oi=fnd&pg=PA295&dq=chin+1998+PLS&ots=47qB7ro0np&sig=rihQBibvT6S-Lsj1H9txe9dX6Zk#v=onepage&q&f=false>
- Cucinelli, D., & Soana, M. G. (2023). Investor preferences, financial literacy and intermediary choice towards sustainability. *Research in International Business and Finance*, 66. <https://doi.org/10.1016/j.ribaf.2023.102027>
- Dash, A., & Mohanta, G. (2024). Fostering financial inclusion for attaining sustainable goals: What contributes more to the inclusive financial behaviour of rural households in India? *Journal of Cleaner Production*, 449(February), 141731. <https://doi.org/10.1016/j.jclepro.2024.141731>
- Delemere, E., & Liston, P. M. (2024). Reducing e-waste in Europe: Examining the impact of environmental and financial literacy on the premature replacement of appliances across owner *Energy Reports*, 5910–5921. <https://www.sciencedirect.com/science/article/pii/S2352484724003172>
- Frisancho, V. (2023). Spillover effects of financial education: The impact of school-based programs on parents. *Journal of Financial Literacy and Wellbeing*, 1(1), 138–153. <https://doi.org/10.1017/flw.2023.2>
- Ghozali, I. (2014). Structural Equation Modeling Metode Alternatif Dengan Partial Least Squares (PLS). Universitas Diponegoro Semarang. In *Structural Equation Modeling Metode Alternatif Dengan Partial Least Squares (PLS)*. Universitas Diponegoro Semarang. Badan Penerbit Universitas Diponegoro.
- Grohmann, A. (2018). Financial literacy and financial behavior: Evidence from the emerging Asian middle class. *Pacific Basin Finance Journal*, 48(July 2017), 129–143. <https://doi.org/10.1016/j.pacfin.2018.01.007>
- Hair et al. (2019). *A primer on partial least squares structural equation modeling (PLS-SEM) (2nd ed.)*. Sage Publications.
- Liu, L., & Zhang, H. (2021). Financial literacy, self-efficacy and risky credit behavior among college students: Evidence from online consumer credit. *Journal of Behavioral and Experimental Finance*, 32, 100569. <https://doi.org/10.1016/j.jbef.2021.100569>
- Lu, Z., Li, H., & Wu, J. (2024). Exploring the impact of financial literacy on predicting credit default among farmers: An analysis using a hybrid machine learning model. *Borsa Istanbul Review*, 24(2), 352–362. <https://doi.org/10.1016/j.bir.2024.01.006>
- Mazzoli, C., Ferretti, R., & Filotto, U. (2024). Financial literacy and financial advice seeking: Does product specificity matter? *Quarterly Review of Economics and Finance*, 95, 98–110. <https://doi.org/10.1016/j.qref.2024.03.012>
- Morgan, P. J., & Long, T. Q. (2020). Financial literacy, financial inclusion, and savings behavior in Laos. *Journal of Asian Economics*, 68, 101197. <https://doi.org/10.1016/j.asieco.2020.101197>

- Nițoi, M., & Pochea, M. M. (2024). Trust in the central bank, financial literacy, and personal beliefs. *Journal of International Money and Finance*, 143. <https://doi.org/10.1016/j.jimonfin.2024.103066>
- PPATK. (2024). *PPATK Annual Report for 2023*. <https://www.ppatk.go.id/publikasi/read/225/ppatk-annual-report-for-2023.html>
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40(3), 879–891. <https://doi.org/10.3758/BRM.40.3.879>
- Rey-Ares, L., Fernández-López, S., Castro-González, S., & Rodeiro-Pazos, D. (2021). Does self-control constitute a driver of millennials' financial behaviors and attitudes? *Journal of Behavioral and Experimental Economics*, 93. <https://doi.org/10.1016/j.socec.2021.101702>
- Sekaran U, B. R. (2019). *Research Methods for Business: A Skill-Building Approach*. Wiley.
- Strömbäck, C., Skagerlund, K., Västfjäll, D., & Tinghög, G. (2020). Subjective self-control but not objective measures of executive functions predicts financial behavior and well-being. *Journal of Behavioral and Experimental Finance*, 27, 100339. <https://doi.org/10.1016/j.jbef.2020.100339>
- Ventre, V., Martino, R., & Muñoz Torrecillas, M. J. (2024). Relationship between an inconsistent degree of financial literacy and inconsistent decision-making in intertemporal choices. *Heliyon*, 10(5). <https://doi.org/10.1016/j.heliyon.2024.e27253>
- Widjayanti, C. E., Adawiyah, W. R., & Sudarto. (2025). Financial literacy innovation is mediated by financial attitudes and lifestyles on financial behavior in MSME players. *Journal of Innovation and Entrepreneurship*, 14(1). <https://doi.org/10.1186/s13731-025-00525-5>